Shlomo, Noah, Zach, and Kailey

<center>**Project Proposal**</center>

1. Introduction Should Include The Following:

a. Introduce your research question or problem you intend to solve. Include why this is important.

- Our research would be focused on how the most popular songs in the past statistically influenced songs in the future through use of instruments, keys, drums, etc. We hope that we can create a "map" of sorts showing where many musical elements that we are familiar with have their origins, and how songs can affect music for the years after. This is important, because a lot of research has been done into what makes a song popular, however, nobody could statistically determine which are the most influential. We are hoping that our research will help us analyze which songs have shaped the music industry and why.

b. Relevant Background (the bare minimum for this is 0.5 page in single spaced with a minimum of 5 references and at least 1 of those must be from a peer- reviewed journal article). This should focus on what we know, what we don't know, what has been tried previously etc. We'll help you find these, just ask!

We may think that music and the creation of songs is something mysterious that only musicians understand, but that's not the case. In a way music is like math, it has its formulas and its ways of putting everything together. In music you cannot simply put random notes and chords together and create a song, you will have to follow a key and a certain pattern. Throughout time music has changed a lot, and if you look closely you can see a clear resemblance of how musicians use songs from the past as an inspiration, and in some cases, copy essential parts of their songs.

Songs are typically composed around a key, which in theory limits the notes you could use, your piece revolves around this key. Chord progression, tempo, and instruments are also a big part of your piece[1]. By finding all of these elements and a few others we can measure how popular songs from the past have influenced the ones we listen to right now. Musicians do not necessarily copy songs from the past, however, they copy certain traits in the music. Sometimes an era has a certain chord progression or tempo that is very popular, and the vast majority of musicians follow that trend until some song is influential enough to change it. For example, for the past 5-10 years pop songs have all been "4 chord songs" and high tempoed. A big example for this type of music is Ed Sheeran, who bases all of his songs on simple chords and has, in my opinion, been a pioneer for pop music for the past few years.

In this project we will try to figure out how all of the elements of a song directly

influence other songs. We as a group still do not completely understand the people's choices that lead to the chosen keys and chord progressions. Popular streaming services like Spotify, Pandora, and Apple Music use this data that we are looking for. They analyze the users music taste by identifying key elements in the songs that he or she listens to, it later uses this data to recommend other songs to the user and create the top listened songs.

2. Methods Section Should Include The Following:

a. What data will you collect?
- We will collect song data such as BPM, chord progressions, song structure, effects used, etc. from songs across different decades

b. What will you measure? How?
- We will quantify the most prevalent features in the makeup of the song. BPM, chord progressions and song structure can be listed but we will have to assign a boolean value to different effects used within the song.
- For example, the song "Don't Start Now" by Dua Lipa has a chord progression of vi-I-i-IV, a bpm of 124. The backbone and most memorable aspect of the song is the bass, with a deep growly tone that sounds directly out of a 70's disco track.
- We can use this data to examine trends in music over time, such as the prevalence of certain chord progressions and bpms (which primarily drives the mood of the song) in the face of different world affairs and trends in societies accumulative behaviour, as well identifying the individual influences the song has from other genres/time periods.

c. What items do you need?
- Computer
- Instruments (optional)

d. Write step-by-step protocol for exactly how you will conduct your experiment / research / prototype.
- Research common things found in music theory to grab some starting ideas on what to look for
- Go though the billboard top 3 for every year since 1960 and listen to every song. Write down noticeable effects / innuendos in music.
- Research artist of each song to find out influences
- Organize data into charts and graphs to start to draw conclusions.
- Look to see if that top 3 song was not the origin of the musical thing, and cite the origin song if possible

e. How will you know what your results mean? Or that one solution Is better than another?
- By examining prominent features in one era of music and noticing how they change throughout the conditions society was in, we can determine what effect outside stimuli has on music popularity and how that has changed throughout the decades

3. References: Cited in APA format

[1]Sarmad, Brantingham, J., Garg, P., John, T., Paul, Alex, . . . Bryant, K. (2019, October 09). How to Compose Music - Art of Composing - Learn to Create Music. Retrieved October 08, 2020, from https://www.artofcomposing.com/how-to-compose-music-101

[2]Carlton, A. D. (2012, June 6). *I analyzed the chords of 1300 popular songs for patterns. This is what I found. – The Hooktheory Blog.* HookTheory. https://www.hooktheory.com/blog/i-analyzed-the-chords-of-1300-popular-songs-for-patterns-this-is-what-i-found/

[3]Kayashima, Y., Yamamuro, K., Makinodan, M., Nakanishi, Y., Wanaka, A., & Kishimoto, T. (2017). Effects of Canon chord progression on brain activity and motivation are dependent on subjective feelings, not the chord progression per se. Neuropsychiatric Disease and Treatment, 13, 1499–1508. https://doi.org/10.2147/NDT.S136815

[4]Pagès-Portabella, C., & Toro, J. (2019). Dissonant endings of chord progressions elicit a larger ERAN than ambiguous endings in musicians. Psychophysiology, 57(2), e13476–n/a. https://doi.org/10.1111/psyp.13476

[5]Team, Musical U. "Exploring Common Chord Progressions." Musical U, 21 Jan. 2020, www.musical-u.com/learn/exploring-common-chord-progressions/.

4. Responsibilities/timeline: include a timeline that shows how you will get through your prototype or pilot study phase and who is responsible for each task.

As a group we will work through different eras of music, we will do 3 of the seemingly most influential songs of each era. We will divide the eras so that each of us do the whole process of analyzing the songs for each era equally. We will be considering all of these different lenses of analysis for each song and era:

- **Historical context**
    a. Social influences
        - Community
        - Family
    b. Political influences
        - Wars
        - Different political movements
        - Class
        - Race?
- **Rhythm**

a. Time signature
b. Beat emphasis
c. Swing
d. Tempo
e. 808s
f. Synths
g. Flangers/Phasers
h. Accent horns
i. Slap delays

- **Chord Progressions**
    a. Key
    b. Tension/Resolution
    c. Complexity
    d. Voices/Inversions
    e. Improvisation

- **Artists influences**
    a. Inspirations
        - Personal history
        - Other musicians
        - Jazz standards
        - Other types of artists
            - Writers
            - Filmmakers
        - Other people in the lives of the artists
            - Family
            - Friends
            - Friends in music industry

- **Instruments**
    a. Techniques
    b. New instruments
    c. Pedals/Effects